

**Notice of Allowability****Application No.**

09/555,559

**Applicant(s)**

TUCK ET AL.

**Examiner**

Kevin Quarterman

**Art Unit**

2879

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 16 September 2003.
2. ☒ The allowed claim(s) is/are 4,5 and 7-13.
3. ☒ The drawings filed on 24 October 2002 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☐ All    b) ☐ Some\*    c) ☐ None    of the:
    1. ☐ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
- \* Certified copies not received: \_\_\_\_\_.
5. ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
  - (a) ☐ The translation of the foreign language provisional application has been received.
6. ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application. **THIS THREE-MONTH PERIOD IS NOT EXTENDABLE**

7. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
8. ☐ CORRECTED DRAWINGS must be submitted.
  - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
    - 1) ☐ hereto or 2) ☐ to Paper No. \_\_\_\_\_.
  - (b) ☐ including changes required by the proposed drawing correction filed \_\_\_\_\_, which has been approved by the Examiner.
  - (c) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No. \_\_\_\_\_.

**Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet.**

9. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- |  |   |
|--|---|
| 1 <input type="checkbox"/> Notice of References Cited (PTO-892)  | 2 <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)          |
| 3 <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                    | 4 <input type="checkbox"/> Interview Summary (PTO-413), Paper No. _____             |
| 5 <input type="checkbox"/> Information Disclosure Statements (PTO-1449), Paper No. _____               | 6 <input type="checkbox"/> Examiner's Amendment/Comment                             |
| 7 <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit of Biological Material | 8 <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
|  | 9 <input type="checkbox"/> Other  |

## **DETAILED ACTION**

### ***Response to Amendment***

1. Applicant's amendment, filed 16 September 2003, has been entered and overcomes the claim rejections cited in the Examiner's previous office action, mailed 30 June 2003.

### ***Allowable Subject Matter***

2. Claims 4-5 and 7-13 are allowed.

3. The following is an examiner's statement of reasons for allowance: Regarding independent claim 4, the prior art of record neither shows or suggests a method of manufacturing an image display apparatus comprising, in addition to other steps in the claim, a step of securing two long sides of rectangular spacers to at least either an anode substrate or a cathode substrate, wherein tensions are added to the spacers in the lengthwise direction of the spacers and wherein if  $\alpha_s \leq \alpha_g$  then the following expressions are satisfied:

$$\alpha_s \times \Delta t_1 + (\alpha_g - \alpha_s) \times \Delta t_2 < \varepsilon$$

$$\alpha_s \times \Delta t_1 - (\alpha_g - \alpha_s) \times \Delta t_3 < 0, \text{ and wherein}$$

if  $\alpha_s \geq \alpha_g$ , the following expressions are satisfied.

$$\alpha_s \times \Delta t_1 + (\alpha_g - \alpha_s) \times \Delta t_2 < 0$$

$$\alpha_s \times \Delta t_1 - (\alpha_g - \alpha_s) \times \Delta t_3 < \varepsilon,$$

wherein a thermal expansion coefficient of the spacer is defined as  $\alpha_s$ , a thermal expansion coefficient of the anode substrate or the cathode substrate on which the spacer stands erect is defined as  $\alpha_g$ , a difference between a temperature of the spacer

at which the spacer is stood erect and a temperature of the substrate when the spacer stands erect is defined as  $\Delta t_1$ , a difference between a temperature at which the spacer is heated after the spacer has been stood erect and the temperature of the substrate when the spacer stands erect is defined as  $\Delta t_2$ , a difference between a lowest temperature at which preservation is permitted and a temperature of the substrate when the spacer stands erect is defined as  $\Delta t_3$  and a maximum thermal expansion coefficient of the spacer within limit of pulling is  $\epsilon$ .

4. The subject step of securing the spacers to the substrate, as described earlier, is provided for reliably forming a spacer with sufficient strength against high pressure without lowering the brightness of the displayed image. Due to their dependency upon independent claim 4, claims 5 and 7-13 are also allowable. The design is new and unique to the art.

5. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

**Contact Information**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin Quarterman whose telephone number is (703) 308-6546. The examiner can normally be reached on M-F (8-4:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh Patel can be reached on (703) 305-4794. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

Kevin Quarterman  
Examiner  
Art Unit 2879

kq   
October 30, 2003



**Nimesh Patel**  
**Supervisory Patent Examiner**  
**Art Unit 2879**